



US006753171B2

(12) **United States Patent**
Karube et al.

(10) **Patent No.: US 6,753,171 B2**
 (45) **Date of Patent: Jun. 22, 2004**

(54) **SITE-SPECIFIC CELL PERFORATION
 TECHNIQUE**

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(*) Notice: Subject to any disclaimer, the term of this
 patent is extended or adjusted under 35
 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/623,970**

(22) PCT Filed: **Mar. 12, 1999**

(86) PCT No.: **PCT/JP99/01223**

§ 371 (c)(1),
 (2), (4) Date: **Dec. 28, 2000**

(87) PCT Pub. No.: **WO99/46361**

PCT Pub. Date: **Sep. 16, 1999**

(65) **Prior Publication Data**

US 2003/0180946 A1 Sep. 25, 2003

(30) **Foreign Application Priority Data**

Mar. 12, 1998 (JP) 10-080177

(51) Int. Cl.⁷ **C12N 15/09; C12N 15/85;
 C12N 15/86; C12N 15/87; C12N 15/63**

(52) U.S. Cl. **435/173.5; 435/173.1;
 435/325; 435/449; 435/455; 435/460**

(58) Field of Search **435/173.5, 449,
 435/455, 460, 173.1, 325**

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(57) **ABSTRACT**

A technique for controlling membrane denaturation reac-
 tions other than physical shear force was developed. For
 example, the present invention provides, a method for
 causing membrane disruption at a specific site by reacting a
 stimulus such as light with a compound that is activated by
 the stimulus, where the reaction occurs on a membrane such
 as a biomembrane. It also provides a membrane structure
 such as cells in which a specific site has been disrupted,
 which are obtained by the present method. Introduction of
 substances such as genes also became possible by using this
 membrane structure. Further provided is a membrane-
 destroying member for disrupting a membrane at a specific
 site. Thus, the present invention enabled, for example, easy
 membrane penetration using components constituting
 microelectrodes, micromanipulators, and microinjectors,
 which were conventionally hardly usable in penetrating cell
 membranes.

2 Claims, 13 Drawing Sheets

